

REMARKS

It is noted that the previous Amendment by Applicant overcame the cited prior art references of Rosenberg, Heikkinen, and Fernando as these references are no longer being cited against the present application.

Claim rejections under 35 U.S.C. § 103

In item 3, claims 8, 9, 12-17, 22, 23, 26-31, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirose (5,170,348), in view of Gerpheide (6,473,069) and further in view of Godfrey et al. (5,433,610).

Specifically, claims 8, 22, and 36, referring to figures 1-3 and 11, Hirose is said to teach all of the elements of these claims except for visual and audible feedback.

Applicant respectfully traverses the rejection of claims 8, 22 and 36 in light of Hirose using the following analysis. This analysis is directed to the elements as listed in claim 8, but applies to claims 22 and 36 as well. The most important prior art reference is clearly Hirose as it forms the basis of all rejections of the present invention.

Hirose is described in the Office Action as being a touchpad keyboard. Hirose is so vague as to how it actually operates that it becomes difficult to make comparisons because so much of the device is not described in any detail. The lack of detail of Hirose has opened it to mischaracterizations and generalizations that Hirose clearly does not teach. What Hirose does teach is an input device that uses a stylus to enter alphanumeric characters. Switches are disposed on the surface of the device to enter characters. The

switches are described in vague terms, but appear to be, in a preferred embodiment, nothing more than mechanical buttons such as those found in calculators at the time the application of Hirose was filed. For example, the character inputting panel is described exclusively in terms of having a "plurality of switches" (see col. 1, line 33 to col. 4, line 6). Switches, by definition, are individual and separate devices. Switches may be grouped together, but they are individual devices in function. Each switch has its own mechanism for being actuated, and for sending information to a central processor. Hirose also teaches in col. 8, lines 34-37, that the switches might use another type of sensing mechanism such as pressure sensors, electrostatic capacitance sensing technology, magnetic detecting sensors, or proximity switches. No detail is provided on any of these other switches types. Lacking any detail, it must be assumed that each switch is a self-contained switching element operating on its own, and providing data to a central processor when actuated. Thus, the different switch types only describe the technology of an individual switch.

It is also observed that Hirose teaches that switching elements might be disposed within a transparent sheet-like switch as explained in col 8, lines 54-58. Note that the switching elements are simply grouped together, but are still functioning as individual switching elements. Note also that the transparent sheet is not an overlay as is understood by the present invention. In the present invention, an overlay is an inert object that includes no electronic elements, but only functions to provide visual feedback as to the identity of buttons.

In summary, Hirose teaches a plurality of individual switching elements (buttons) that may use one of several different sensing technologies to determine when a switch has been actuated.

In contrast, the present application in its various embodiments teaches a very different keyboard technology. Instead of having individual switch elements, those skilled in the art of touchpads understand that a touchpad of the present invention is a single sensing element. There are no individual switching elements. The single sensing element only determines where on its unified sensing surface contact is being made by a pointing object, such as a finger or stylus. Once the location is determined by localizing the exact location of the pointing object, firmware is used to associate the location on the single unified sensing surface with a corresponding button. The unified sensing surface of the touchpad keyboard of the present invention is not a plurality of switches, and operates from a fundamentally different perspective. The present invention simply determines the location of the pointing object, and determines what button has been assigned to that "virtual" location as represented by an overlay disposed on the surface of the touchpad keyboard.

For comparison purposes, note also that Hirose does not perform any "localizing" of the location of a pointing object on its character inputting surface. No "localizing" is necessary because Hirose uses individual switches. Hirose has no need to localize because each switch simply sends the information that it has been actuated. In contrast, when there is only one sensing surface in the present invention, "localizing" is a different

and necessary step because it is the only way to determine where the pointing object is in contact with the touchpad keyboard. This information is then used to associate a location on the surface of the touchpad keyboard with a corresponding button.

It is also noted that the touchpad technology of the present invention was first sold in a commercially available product in 1994. The first patent for this technology (US Patent No. 5,305,017) issued to Cirque Corporation, the assignee of the present application, was not issued until 1994. Therefore, this technology should not have been known to Hirose at the time Hirose was filed in 1991.

Hirose operates in a fundamentally different manner than the touchpad of the present application. Accordingly, claims 8, 22 and 36 are herein amended to more clearly and distinctly claim the present invention, and distinguish the invention from the prior art. These changes to the claims will now be discussed through a detailed analysis of the rejected claims as follows.

First, the Office Action states that a "character inputting area 5" is equivalent to a touchpad keyboard for entering data into a hand-held and portable electronic appliance. It is asserted that Hirose teaches the first element of the claims, wherein the first element is *"a touchpad including circuitry for detecting and localizing a pointing object on a surface thereof;"* as taught in col. 8, lines 33-37.

Applicant respectfully traverses the assertion that this element is taught or suggested by Hirose. The type of switch technology taught by Hirose does not require detection and localizing of the position of a pointing object. As explained above, a switch

is much simpler. A switch only determines if it has been actuated. It is an on-or-off device. "Detecting and localizing" are not functions performed by switches, nor does Hirose even suggest that need. The present application is adapting a touchpad that is normally used for detecting and localizing because there is a single large unified sensing element in the present application.

It is asserted that Hirose teaches the second element of the claims. The second element has been eliminated from the claims as an unnecessary limitation that need not be claimed in order to differentiate the invention from the prior art.

It is asserted that Hirose also teaches the third element of the claims, wherein the third element is *"an overlay disposed on the surface of the touchpad keyboard that defines a plurality of keys, wherein the overlay provides visual feedback that corresponds to signals that will be generated therefrom when the plurality of keys of the touchpad keyboard are touched;"*. It is asserted that Hirose teaches this element in col. 8, lines 54-61.

Applicant respectfully traverses the assertion that Hirose teaches an overlay as defined by the embodiments of the present invention. An overlay is defined in the application is *"a keyboard overlay 12 that is the physical division of zones on the touchpad surface. Each zone will typically define a single key."* (see page 17, lines 15-17) It is critical to realize that the overlay is only a visual reference. This fact is explained clearly when the application states that the *"keyboard overlay 12 is only useful to the*

user, it does not actually provide information to the touchpad circuitry." (see page 15, lines 2-4) Thus, the overlay is just a visual clue for the user. There is no electronic circuitry in the overlay. The circuitry inside the touchpad has already defined into it what areas on the touchpad surface correspond to symbols that the user sees on the overlay.

With this understanding in mind of the function of the overlay in the application, this is now compared to the teaching of Hirose. Hirose teaches in col. 8, lines 54-61 that the overlay is *"[a] transparent sheet-like switch [that] is provided at the character inputting panel, and this transparent sheet-like switch is furnished with switching elements individually corresponding to many characters."* Thus, the function of the overlay in Hirose is to actually be a functioning part of the character inputting device because it has physical switching elements. Thus, Hirose teaches that the overlay is not just a visual clue for the user as to the symbols that can be selected. In Hirose, the overlay includes switching circuitry. For direct support of this conclusion, Applicant points out that in col. 8, lines 63-65, Hirose states that, "a transparent sheet-like switch may be installed on the surface of a display area such as a liquid crystal or cathode ray tube." The switches have to be in the transparent sheet-like switch because they are disposed on top of a display, and the display can be seen through the sheet. This is just another explicit indication that the "overlay" of Hirose is not the same as in the present invention, because the symbols on the overlay of the present invention would prevent a user from seeing the display underneath.

There is another important difference between the overlay of Hirose and the

present application. The overlay of the present application functions as a **visual** indicator of symbols. If the symbols on the overlay are visible, the overlay cannot be transparent as is the overlay in Hirose; otherwise, the symbols would not be visible.

It is asserted that Hirose also teaches the fifth element of the claims, wherein the fifth element is *"an audio feedback system that causes a pre-recorded sound to be made audible whenever any key of the plurality of keys is touched on the touchpad keyboard."*

Applicant respectfully traverses the assertion that the combination of Godfrey and Hirose makes obvious the element of audible feedback. The function of audible feedback is of importance when considering method claims 8 and 22. The purpose of the audible feedback is only to provide assurance to a user that a particular key on an overlay has been touched. The purpose of the audible feedback in Godfrey is different. The purpose in Godfrey is to give a relatively long message that teaches a user about the picture that has been touched. The purposes are not the same, and therefore the obviousness of the action cannot be imputed to the claims of the present invention. Furthermore, it is asserted that Godfrey does not make the apparatus claim 36 any more obvious because Hirose is so substantially deficient in its teachings that it should not be used to reject the claims of the present application.

Regarding claims 9 and 23, it is asserted that the combination of Hirose, Gerpheide and Godfrey make obvious the audible feedback. Applicant respectfully traverses because the function of the pre-recorded voice in Godfrey is not to provide feedback that a button has in fact been touched as in the present invention, but only to

play a pre-recorded message that teaches the user about the object in the picture that has been touched. When the functions are so clearly and greatly different, the function cannot be imputed to the method as taught by the present application. The user of Godfrey desires to play a message that will teach the user. The desire is to obtain an audible message. In contrast, the purpose of the user is not to obtain audible feedback. The desire of the user is only to know if a key has been selected so that the user knows that data has been entered.

Regarding claims 12 and 26, it is asserted that Hirose teaches a communication cable coupled to a communication port.

Applicant respectfully asserts that for the reasons given above that explain why Hirose does not teach or suggest the present invention, that claims 12 and 26 are therefore dependent upon allowable base claims.

Regarding claims 13 and 27, it is asserted that Hirose teaches that the hand-held and portable electronic appliance is a portable computer.

Applicant respectfully asserts that for the reasons given above that explain why Hirose does not teach or suggest the present invention, that claims 13 and 27 are therefore dependent upon allowable base claims.

Regarding claims 14 and 28, it is asserted that Hirose teaches that the communications port is wire.

Applicant respectfully asserts that a wire is only one of the methods given for communication between a portable electronic appliance and a touchpad keyboard.

Hirose does not teach or suggest the other methods. Furthermore, for the reasons given above that explain why Hirose does not teach or suggest the present invention, it is asserted that claims 14 and 27 are therefore dependent upon allowable base claims.

Regarding claims 15 and 29, it is asserted that the combination of Hirose, Gerpheide and Godfrey teaches a touchpad keyboard that includes an overlay further comprises tactile feedback.

Applicant respectfully traverses the rejection. An overlay as taught by Hirose is not simply a visual clue to a user of the identity of the keys, and which rests on top of a touchpad keyboard as taught by the present invention, but instead serves the very different function of including the switches that are being actuated. Whereas the overlay of the present invention can be easily replaced, the overlay of Hirose is a costly device that includes switches. Furthermore, for the reasons given above that explain why Hirose does not teach or suggest the present invention, it is asserted that claims 15 and 29 are therefore dependent upon allowable base claims.

Regarding claims 16 and 30, it is asserted that the combination of Hirose, Gerpheide and Godfrey teaches a touchpad keyboard that includes a plurality of raised ridges defining a plurality of zones.

For the reasons given above that explain why Hirose does not teach or suggest the present invention, it is asserted that claims 16 and 30 are therefore dependent upon allowable base claims.

Regarding claims 17 and 31, it is asserted that Hirose teaches that the touchpad is

capacitance-sensitive, electrostatic, finger or stylus responsive devices.

Applicant respectfully traverses the rejection of these claims. A device can include the above-cited technologies without being a touchpad keyboard as defined by the present invention. As Hirose fails to teach a touchpad as defined by the present invention as explained previously in support of claims 8, 22, and 26, there is no reason to impute such a teaching to Hirose, especially when a touchpad as defined by the present invention was not sold commercially until three years after the filing of Hirose.

In item 4, claims 10 and 24 are rejected as being unpatentable over Hirose, Gerpheide, Godfrey and further in view of Kikinis. It is asserted that the first three references fail to teach a mechanical wheel for scrolling of data.

For the reasons given above that explain why Hirose does not teach or suggest the present invention, it is asserted that claims 10 and 24 are therefore dependent upon allowable base claims.

In item 5, claims 11, 25 and 37 are rejected as being unpatentable over Hirose, Gerpheide, Godfrey and further in view of Kono. It is asserted that the first three references fail to teach a scrolling zone, but that Kono teaches a scrolling zone.

Applicant respectfully traverses the rejection of these claims. Kono does not teach a scrolling zone where a user slides an object up and down to cause scrolling. Kono specifically teaches two buttons, one for scrolling up and one for scrolling down. A scroll zone is not the same thing as individual buttons that a user touches to actuate. Kono does not require sliding of a finger, and in fact would not operate as the does the present

application if the user slid the finger from one button to the other.

Regarding claim 37, it is asserted the Kono teaches the aspect of a microphone for recording audio data for transmission via a network, and for live transmission via a network.

Applicant respectfully traverses the rejection of these claims. None of the references cited teaches anything about a computer network. Teaching a microphone in Kono cannot be used to also assert that the audio data is being recorded for transmission via a compute network, or for live transmission via a computer network, when no computer network is even suggested by any of the references.

In item 6, claims 18, 19, 21, 32, 33, and 35 are rejected as being unpatentable over Hirose, Gerpheide, Godfrey and further in view of Grant et al. It is asserted that Grant teaches a dedicated key for web navigation and for actuating a computer program.

For the reasons given above that explain why Hirose does not teach or suggest the present invention, it is asserted that claims 18, 19, 21, 32, 33, and 35 are therefore dependent upon allowable base claims.

In item 7, claims 20 and 34 are rejected as being unpatentable over Hirose, Gerpheide, Godfrey and further in view of Ure. It is asserted that Ure teaches a mode switch that enables switching functions between a touchpad keyboard and a cursor control device.

Applicant respectfully traverses the rejection of the claims. For the reasons given

above that explain why Hirose does not teach or suggest the present invention, it is asserted that claims 20 and 34 are therefore dependent upon allowable base claims.

Conclusion

In light of the statements above, Applicant respectfully requests issuance of claims 8 to 37. If any impediment to the allowance of these claims remains after entry of this Amendment, and such impediment could be alleviated during a telephone interview, the examiner is invited to call David W. O'Bryant at (801) 478-0071 so that such matters may be resolved as expeditiously as possible.

The Commissioner is hereby authorized to charge any additional fee or to credit any overpayment in connection with this Amendment to Deposit Account No. 50-0881.

DATED this 1st day of April, 2005.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David W. O'Bryant", written in a cursive style.

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